**CULMINATING TASK: Discovering Scientific Literature in Biochemistry**

For this culminating task, you will be getting into groups of three or four. Together, you will be choosing one of two scientific articles, reading it as a group and answering the subsequent questions. You will be given a period to complete the work, but whatever is not finished may be taken for homework to submit the next day. **Use the in-class time wisely, since the articles are quite difficult, and since you have the opportunity to ask me questions.** Only ONE completed question sheet is to be submitted per group.

**PART 1:** Choose one of the following articles to read and discuss:

1. **Catalase Regulates Cell Growth in HL60 Human Promyelocytic Cells: Evidence for Growth Regulation by H₂0₂**

Misao Hachiya and Makoto Akashi

*Radiation Research* , Vol. 163, No. 3 (Mar., 2005), pp. 271-282

Published by: [Radiation Research Society](http://www.jstor.org.myaccess.library.utoronto.ca/action/showPublisher?publisherCode=rrs)

Article Stable URL: <http://www.jstor.org.myaccess.library.utoronto.ca/stable/4138690>

**NOTE: IF YOU CHOSE THIS ARTICLE, OMIT READING THE “MATERIALS AND METHODS SECTION”.**

1. **Dynamic, Yet Structured: The Cell Membrane Three Decades after the Singer-Nicolson Model**

G. Vereb, J. Szöllősi, J. Matkó, P. Nagy, T. Farkas, L. Vígh, L. Mátyus, T. A. Waldmann and S. Damjanovich

*Proceedings of the National Academy of Sciences of the United States of America* , Vol. 100, No. 14 (Jul. 8, 2003), pp. 8053-8058

Published by: [National Academy of Sciences](http://www.jstor.org.myaccess.library.utoronto.ca/action/showPublisher?publisherCode=nas)

Article Stable URL: <http://www.jstor.org.myaccess.library.utoronto.ca/stable/3139878>

**PART 2:** Read.

Read the article together as a group. Highlight key pieces of information as you go. Try to understand as much as you can, and if you have any questions, make sure to ask me, so you get a full understanding of what has been written. Once you have done that, write a BRIEF summary of the article (2-4 sentences), discussing the main idea (**C 4 marks**).

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**PART 3:** Answer the following questions.

1. What type of article is this: a primary research article or a review article? Give evidence. **(K/U 2 marks)**

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1. What did this article conclude? (What conclusions were made?) **(K/U 2 marks)**

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1. How does this article relate to the topics discussed during the Biochemistry unit? Be specific. (**A 8 marks**).

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1. What new information did you learn from this article that you found interesting, surprising or shocking? Why? (**C 2 marks**)

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1. What are the future implications of the discoveries/information presented in the article? How does this information impact future societies? **(T/I 4 marks**)

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**PART 4: Critical Thinking**

Write a brief critical appraisal of the article (two-three paragraphs). You will consider the validity of the article by answering the following questions. Does the argument make sense? Does the information support the argument? Does the article use reputable, current sources? Does the article make any assumptions? Is the article published in a reputable journal? Overall, is the article credible? Give evidence for each question you answer. You may need to do some research to answer some of these questions. (**T/I 10 marks**)

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**CULMINATING TASK: “Discovering Scientific Literature in Biochemistry” RUBRIC**

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| --- | --- | --- | --- | --- |
| CATEGORIES | LEVEL 1 | LEVEL 2 | LEVEL 3 | LEVEL 4 |
| Knowledge and Understanding | Demonstrates  knowledge and understanding of terms, and concepts within the article with LIMITED effectiveness | Demonstrates  knowledge and understanding of terms, and concepts within the article with SOME effectiveness | Demonstrates  knowledge and understanding of terms, and concepts within the article with CONSIDERABLE effectiveness | Demonstrates  knowledge and understanding of terms, and concepts within the article with a HIGH DEGREE of effectiveness |
| Thinking | Uses critical thinking to draw conclusions based on prior knowledge and information from the article with LIMITED effectiveness | Uses critical thinking to draw conclusions based on prior knowledge and information from the article with SOME effectiveness | Uses critical thinking to draw conclusions based on prior knowledge and information from the article with CONSIDERABLE effectiveness | Uses critical thinking to draw conclusions based on prior knowledge and information from the article with a HIGH DEGREE of effectiveness |
| Communication | Uses proper scientific terminology and discusses the biochemical concepts presented in the article in a clear and organized fashion with LIMITED effectiveness | Uses proper scientific terminology and discusses the biochemical concepts presented in the article in a clear and organized fashion with SOME effectiveness | Uses proper scientific terminology and discusses the biochemical concepts presented in the article in a clear and organized fashion with CONSIDERABLE effectiveness | Uses proper scientific terminology and discusses the biochemical concepts presented in the article in a clear and organized fashion with a HIGH DEGREE of effectiveness |
| Application | Relates the topics discussed in the biochemistry unit to the article with LIMITED effectiveness | Relates the topics discussed in the biochemistry unit to the article with SOME effectiveness | Relates the topics discussed in the biochemistry unit to the article with CONSIDERABLE effectiveness | Relates the topics discussed in the biochemistry unit to the article with a HIGH DEGREE of effectiveness |